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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/749,410	12/28/2000	Keiko Neriishi	030662-066	5255

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EXAMINER

CHAKRABARTI, ARUN K

ART UNIT	PAPER NUMBER
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1634

DATE MAILED: 09/16/2002

13

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/749,410

Applicant(s)

Neriishi, et al.

Examiner

Arun Chakrabarti

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 August 2002.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 13-35 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 13-35 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☒ Other: *Detailed Action*

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DETAILED ACTION

Specification

1. Claim 1 has been amended.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CAR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103© and potential 35 U.S.C. 102(f) or (g) prior art under 35 U.S.C. 103(a).

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3. Claims 1-3 are rejected under 35 U.S.C. 103(a) over Some et al. (U.S. Patent 6,256,405 B1) (July 3, 2001) in view of Burchard et al. (U.S. Patent 6,171,794 B1) (January 9, 2001).

Some et al teach a process for detecting a complementary DNA fragment which comprises the steps of:

a) bringing single-stranded sample DNA fragments having a radioactive label in a liquid phase into contact with a group of DNA, so that the complementary DNA fragments are fixed by hybridization to the area in which the group is fixed (Column 7, lines 18-38);

b) removing unfixed sample DNA fragments from the hybridized DNA (Column 7, lines 38-43).

c) keeping the hybridized DNA in contact with a radiation image storage panel containing a stimuable phosphor in areas corresponding to the areas on which groups of DNAs are hybridized, so that the corresponding areas of the stimuable phosphor sheet can absorb and store radiation energy of the radioactive label coming from the fixed DNA fragments through the openings (Figures 1 and 8 and Column 7, lines 43-50);

d) irradiating the radiation image storage panel with a stimulating light, so that the image storage panel releases a stimulated emission from the area in which the radiation energy is stored (Figures 1 and 8 and Column 7, lines 51-67 and Column 8, lines 24-28);

e) detecting the stimulated emission photoelectrically to obtain a series of electric signals (Figures 1 and 8 and Column 8, lines 1-23 and 29-52);

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f) processing the electric signals to locate the area in which the complementary DNA fragments are fixed (Figure 6 and Column 12, lines 21-67).

Some et al teach a process, in which the spacer sheet is made of non radiation-transmitting material (Column 8, lines 13-23 and Figures 1 and 8, light guiding sheet in this case)

Some et al teach a process, in which the irradiation image storage panel is irradiated with a stimulating light after it is separated from the DNA microarray (Figures 1 and 8 and Column 7, lines 51-67 and Column 8, lines 24-28).

Some et al do not teach a process, which comprises a DNA micro-array having a support and at least two defined areas in each of which a group of probe compounds selected from DNA molecules or DNA fragments.

Burchard et al. teach a process, which comprises a DNA micro-array having a support and at least two defined areas in each of which a group of probe compounds selected from DNA molecules or DNA fragments are fixed (Abstract, Column 20, line 7 to Column 23, line 17, and Table III and Figure 4 and Examples).

It would have been *prima facie* obvious to one having ordinary skill in the art at the time the invention was made to combine and substitute a DNA micro-array having a support and at least two defined areas in each of which a group of probe compounds selected from DNA molecules or DNA fragments are fixed of Burchard et al. into the DNA image forming method of Some et al. since Burchard et al. state, "The present invention provides methods for distinguishing the fractions of polynucleotide sequences which hybridizes to any given probe,

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including probes on microarrays such as those described herein. In particular, the present invention enables users to identify the fraction of sequences which are perfectly complementary to a probe, thereby correcting for effects of cross hybridization in a hybridization assay (Abstract, first two sentences).” By employing scientific reasoning, an ordinary artisan would have combined and substituted a DNA micro-array having a support and at least two defined areas in each of which a group of probe compounds selected from DNA molecules or DNA fragments are fixed of Burchard et al. into the DNA image forming method of Some et al. to improve the process for detecting a complementary DNA fragment. An ordinary practitioner would have been motivated to combine and substitute a DNA micro-array having a support and at least two defined areas in each of which a group of probe compounds selected from DNA molecules or DNA fragments are fixed of Burchard et al. into the DNA image forming method of Some et al. in order to achieve the express advantages, as noted by Burchard et al., of an invention that provides methods for distinguishing the fractions of polynucleotide sequences which hybridizes to any given probe, including probes on microarrays such as those described herein and in particular enables users to identify the fraction of sequences which are perfectly complementary to a probe, thereby correcting for effects of cross hybridization in a hybridization assay.

Response to Amendment

4. In response to amendment, 112 (second paragraph) rejections and 102(e) rejection have been withdrawn. However, a new 103(a) rejection has been included.

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Response to Arguments

5. Applicant's arguments with respect to all pending claims have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CAR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CAR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Arun Chakrabarti, Ph.D., whose telephone number is (703) 306-5818. The examiner can normally be reached on 7:00 AM-4:30 PM from Monday to

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Friday. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gary Jones, can be reached on (703) 308-1152. The fax phone number for this Group is (703) 305-7401. Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group analyst Chantae Dessau whose telephone number is (703) 605-1237.

Arun Chakrabarti

Patent Examiner

September 4, 2002



W. Gary Jones
Supervisory Patent Examiner
Technology Center 1600